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AUTHOR Halcromb, Vern
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ABSTRACT

A profile of vocational educators in the State of California is presented in the document. The study was designed to provide basic descriptive information about the State's vocational educators: who they are, where they are located, and what their inservice education needs are. A pilot testing of the Basic Description Questionnaire was conducted in the spring of 1973 and the final questionnaire was sent in September 1973. Returns were obtained from 1,137 school districts in 58 counties and 96 community colleges, 8 skill centers, 2 correctional facilities, and 62 regional occupational programs or centers. A total of 9,784 responded, of whom 7,872 (80.5%) were teachers. Following a broad profile description a 66-page section presents tabulation, statistical analysis, and discussion of the data collected in the following areas: educational level, area of teaching, occupational title, and ethnic background. It is emphasized that this is a preliminary study and that the remaining school districts will be contacted and followup procedures initiated during 1974. Results so far indicate that 81% of all vocational educators in the State are employed by senior high schools and community colleges and that only 8.4% are members of minority groups. (EC)

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A PROFILE OF VOCATIONAL EDUCATORS: PRELIMINARY REPORT

1974

by

Vern Halcromb
Coordinator, Inservice Education

Division of Vocational Education
University of California

IN COOPERATION WITH:

Program Services Section
Vocational Education Unit
California Department of Education

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U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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PREFACE

This is the first major study of vocational educators in California since the profiles studies of trade and technical teachers and trade and technical leaders were undertaken in 1968 and 1969. Those studies, conducted by the Division of Vocational Education, University of California, Los Angeles, provided descriptive profiles of vocational personnel in the area of trade and technical education. The perceptions and attitudes of trade and technical personnel about key issues formulated a viable basis for policy development and decision-making in the early 1970's.

Although the present study is being carried on with additional objectives in mind, it also serves to update and expand the occupational description of vocational educators in the State of California. For purposes of simplicity, the term "vocational educator" is used generically to include vocational, technical, and practical arts personnel working in programs that provide skills for the world of work. Thus, the information encompassed in this preliminary report provides a descriptive profile of that population group.

While intended primarily for those individuals who will participate in creating improved delivery systems

of vocational education, including professional development, in the State of California, the report may be of interest to vocational education program planners in other states as well.

Sincere appreciation is extended to all those teachers and administrators who have given their assistance during this research project.

Melvin L. Barlow
Director, Division of Vocational Education
University of California

FOREWORD

The major goal of this study was to develop a profile of vocational educators in the State of California. The study was designed to provide basic descriptive information about all of the state's vocational educators: who they are, where they are located, and what their inservice education needs are. Such information is essential for decision-making in establishing a comprehensive, viable, coordinated state plan for professional development.

A unique result of this effort has been the development of a system that allows for information retrieval and periodic updating. Designed to assist program planners, the system can readily provide information about perceived needs for inservice education that are common to all vocational teachers as well as needs that are unique to teachers of each vocational area.

The ultimate objective, which this project supports, is an improved comprehensive system of personnel development in California. The process includes adding flexibility to a scheme for determining quantitative and qualitative personnel requirements in vocational education. Therefore, the information contained in this report should be viewed

as preliminary data from a "planning system" developed as part of the ongoing thrust to continually expand and improve the vocational education program effort in California.

We are grateful for the assistance given to this effort by the state department staff, county coordinators of vocational education, school district personnel, and the teachers who took time from busy schedules to respond to the questionnaire. A special debt of gratitude is extended to the Chancellor's Office, California Community Colleges and to the presidents and teachers of the state's community colleges for their tremendous support in this initial work.

James W. Becket, Coordinator
Professional Development
Program Services Section
Vocational Education Unit
California Department of Education

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SECTION ONE

BACKGROUND FOR THE STUDY

INTRODUCTION

Vocational education, that part of the total program of education that prepares students for careers in the world of work, is in transition. To keep pace with the ongoing technological and cultural changes intrinsic to an industrial society, vocational education planners are attempting to develop successful programs that reflect the needs of students, the needs of employers, and the needs of society.

In this period of rapid societal change, consumers, employers, and educators are concerned that educational programs produce favorable results; accountability has become a necessary function of all programs. To assure accountability in vocational education, program planners are developing comprehensive systems designed to overcome all that is defective and obsolete in teaching. Major renovations in the curriculum require alternative methods of instruction. It is now being recognized that individuals learn at different rates and in different ways, and these

factors have become acknowledged components of this educational reform. Such emerging sensitivity to the needs of individuals reflects the intent of the 1968 Amendments to the Vocational Education Act of 1963, which emphasized the occupational needs of people rather than stressing occupations in need of people.

It is paradoxical that while training emphasis has shifted from programs to the needs of individuals, educational reform has concentrated on the building of new curricula, and this effort seems to have taken as its goal the development of a system so complete and foolproof that it could be operated without competent teachers. Consequently, the sobering question that must be posed is: How effective can a new curriculum be if teachers are not prepared or motivated to carry it out?

While admittedly much remains to be done to improve preservice teacher training, it is the teachers now in service who must serve as the principal agents of vocational education reform. Ultimately, the effectiveness of these efforts will depend upon the quality of the teaching that takes place.

HISTORICAL BACKGROUND

There has long been a need in California to have indepth information about vocational teachers who play an important role in the development of trained manpower.

Program planners need to know who those teachers are, where they are located, and what their inservice education needs are. This knowledge is vital if long-range plans for vocational teacher preservice and inservice education are to be realistic in relation to the needs of teachers as well as those of society.

In the fall of 1972 plans were made to develop a profile of all vocational educators working in public schools and correctional facilities in the State of California. Plans called for a statewide survey to elicit information on vocational educators in all occupational fields. Such information as age, years of teaching experience, type of courses taught, and level of formal education would be sought. In addition to basic information, the survey would seek to gain input from vocational educators regarding needs for inservice education in a number of broad areas. To maximize availability and usefulness of the collected data, it was agreed that a system allowing for information retrieval and updating would be designed.

PREVIOUS RESEARCH

It was essential first to extrapolate previous research accomplishments and strengths in order to expand the body of useful knowledge in vocational education.

The design of the present study was therefore based on the model series of "Profiles Studies" conducted at the University of California, at Los Angeles.

In 1966-67, Barlow and Reinhart conducted a profile study of trade and technical teachers with full-time credentials who were not engaged primarily in supervision or administration.[1] The full-time credentials which met the criteria of the study were: (1) the Standard Designated Subjects, Full-time, (2) the Special Secondary Vocational - Class A, and (3) the Special Secondary Vocational - Class B. Full-time teachers with additional responsibilities in supervision, administration, or other school employment were considered within the parameters of the population. Teachers who held a full-time credential but worked only part-time also were included in the population.

A Basic Description Questionnaire (BDQ) to collect descriptive information about the characteristics of trade and technical teachers was sent to an identified group of 2,500 teachers. When processing of questionnaires began, 1,893 returns had been received. Of these returns, 306 failed to meet the parameters of the study and were excluded from the survey population, leaving a total number of 1,587 valid returns.

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[1]Melvin L. Barlow and Bruce Reinhart, Profiles of Trade and Technical Teachers: Summary Report (Los Angeles: University of California, 1966-67).

Data analysis in this study presented a comprehensive profile of trade and technical teachers. Responses pertaining to the need for teacher inservice education indicated that 79 percent of the teachers made suggestions concerning subject area studies and 38.4 percent saw a need for actual trade experience. From a list of 30 items, rated on a scale from 1 to 5, 16 items reflected strong attitudes (mean score 4.63 for "maintaining exposure to the latest trade and technical developments in subject area fields") of trade and technical teachers about improving their methods of instruction. Thus, the authors concluded that the interest of teachers in updating their knowledge and skills was unmistakable.

During 1967-68, a revised form of the 1966-67 study was undertaken by Barlow and Reinhart.[2] Utilizing the same process, 1,100 additional teachers were considered for inclusion in the study. After further examination, 1,087 teachers were sent BDQ's. Of the 797 returns, 146 did not meet the parameters of the study and were eliminated. Therefore, returns from 651 teachers in the 1967-68 restudy were combined with those from the original 1,587 to obtain data on a total of 2,238 teachers in the Revised Summary Report. Inclusion of returns from 651 additional teachers with those from the original population, however, revealed

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[2]Melvin L. Barlow and Bruce Reinhart, Profiles of Trade and Technical Teachers: Summary Report. (Los Angeles: Division of Vocational Education, University of California, 1968).

no changes in suggestions by teachers for inservice training.

In 1969, Barlow and Reinhart conducted a profiles study of trade and technical leaders to extend their research on trade and technical educators.[3] The population of 286 who met the parameters of the research were persons who provided the leadership for trade and technical education in the State of California. These leaders came from a variety of backgrounds in general education, industrial arts, trade and technical education, as well as other vocational areas. All were below the level of general administrative officials.

In conducting the research, three questionnaires and 30 interviews were utilized. The Basic Description Questionnaire designed to collect descriptive information about the characteristics of leaders was sent to the population of 286; all but 31 were returned (a rate of 90 percent). The Work Analysis Form (WAF), an instrument developed by the Ohio State Leadership Studies in the Bureau of Research, was used to provide a modified form of job analysis.[4] This form sent to the same population

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[3]Melvin L. Barlow and Bruce Reinhart. Profiles of Trade and Technical Leaders: Comprehensive Report. (Los Angeles: Division of Vocational Education, University of California, 1969).

[4]Carroll L. Shartle and Ralph M. Stogdill. Work Analysis Forms: Management Positions (Columbus, Ohio: Bureau of Business Research, College of Commerce and Administration, The Ohio State University, 1957).

brought 224 returns (79 percent). In the third questionnaire, entitled Major Issues Questionnaire (MIQ), 15 major issues were identified for consideration by the trade and technical leaders. Data from the MIQ were based on a return of 239 (84 percent).

The demand for teacher inservice training was underscored by trade and technical leaders. Suggestions by leaders related to emphases in training, the importance of discussing training needs, salary scale credit for training, and program implementation. The overall population indicated its preference for an emphasis on instructional skills by a score of 4.55 to 4.27 (on a scale of 1 to 5). In addition, leaders suggested improving discussion of inservice training needs by giving a score of 4.17 to "Maintaining a dialogue between administrators and other vocational leaders."

Suggestions relating to the sponsorship of inservice programs showed preference for providing programs through industry (4.39) over the local level (4.26) and the Bureau of Industrial Education (3.84). The same preference for industry-sponsored training was shown by all leaders regardless of background or type of institution.

The results of this study give further evidence that vocational educators look to inservice training as

one of the best methods of maintaining a qualified teaching force.

DATA GATHERING PROCEDURE

In the spring of 1973, a pilot study was conducted, using as its data-collecting instrument an expanded and refined version of the Basic Description Questionnaire developed by Barlow and Reinhart in 1968.[5] Its purpose was to validate the instrument and to determine the best method of collecting descriptive information about the characteristics of vocational teachers.

The questionnaire was sent to 187 teachers, who represented the four basic areas of vocational education that encompass agriculture, business and distributive, homemaking, and trade and industrial education. The select sample of teachers also represented four high schools, one junior high school, one community college, and one regional occupational center. The total sample size was chosen on the basis of the Social Economic Status (SES) of schools in the Los Angeles area. When processing of the questionnaires began, 170 returns had been received (91 percent).

Three methods were used to distribute the questionnaires: 1) principals were asked to distribute, collect, and return questionnaires completed by their teachers, 2) department

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[5]Barlow and Reinhart. p. 5.

heads were given this responsibility, and 3) questionnaires were mailed directly to individual teachers. An analysis of results obtained via these three methods indicated no significant differences in the response rates. It was therefore concluded that the questionnaires could be economically distributed by selected department chairmen.

The pilot study results revealed further refinements of the instrument that included coding to accommodate computer input. Statewide mailing of questionnaires began in September 1973. Data contained in Section Two of this paper represents initial returns from 1,137 school districts in 58 counties. Also included are returns from 96 community colleges, 8 skill centers, 2 correctional facilities, and 62 regional occupational programs or centers (ROP/ROC's).

SECTION TWO
PRESENTATION AND ANALYSIS OF DATA

INTRODUCTION

The following profile descriptions, comparisons, and other analyses are based on the responses of 9,784 persons who returned the survey questionnaire. For one reason or another, not all of the respondents completed all of the items on the questionnaire. The "missing observations" reported in the following tables indicate the number of persons who left a particular item blank.

In the univariate distributions which follow, percentage figures are reported in two different ways: 1)"Relative Frequency" and 2)"Adjusted Frequency." In the former, percentage figures for each level of a variable represent the percentage of persons who actually indicated that level. "Adjusted Frequency" represents the percentage figures adjusted for missing observations. In this scheme, missing observations are treated as if their distribution were the same as that of the person who did respond.

As one might expect, teachers comprised the greatest number (7,872) of vocational educators in the sample. Since their relative number was so high (80.5% of the respondents) in comparison to the remainder of vocational educators, they had a significant influence on all comparisons made in this report.

BROAD PROFILE DESCRIPTION

The "average" vocational educator in California was likely to be employed in either a senior high school or in a community/junior college. These two types of schools employ fully 81% of all educators who responded to the questionnaire. Junior high schools, where vocational education programs are sometimes offered, accounted for slightly more than 9% of the vocational educators. The odds were overwhelming that the average vocational educator was white (83% of the respondents are), probably held at least a bachelor's degree (as did more than 38% of his fellow vocational educators), and that he had completed graduate work beyond the master's level (31.7% of his colleagues reported having done so). The average vocational educator reported almost 10.2 years of teaching experience; however, the median for that variable was 8.5 years, a figure which reflected the substantial number of young teachers in this area of education. His expertise in his field was reflected by the number of years (10.5) of work

experience in occupations related to his area of teaching. His area of teaching was probably Business and Office Occupations, Trade and Technical, or Industrial Arts, in that order. These latter three areas accounted for almost 65% of the vocational educators who responded to the questionnaire. This average vocational educator was almost certainly employed full-time (4 out of 5 report full-time employment), and he held 1.3 clear credentials. These credentials were likely to be either the Secondary, Special Secondary, and/or the Standard Designated Subjects credentials. Finally, he expressed more than average interest in most topics for inservice education. However, he did not seem to be much interested in needing help in "task analysis," which was one of the topics he was asked to check.

SPECIFIC COMPARISONS

Tables 2-1 through 2-10 present univariate frequency distributions of ten demographic variables which partially describe the population of vocational educators who responded to the survey questionnaire. These data are included at this point so that the interested reader can, if he desires, compare them with the norms referred to in Section One. The authors chose to comment on only those tables which, by themselves, demanded attention. In general, the two-way

and three-way contingency tables provide more meaningful data for analysis.

Table 2-2 illustrates dramatically the extremes in institutional employment of vocational educators. The low number of persons who reported being employed in correctional facilities (14), skill centers (55), and in apprenticeship programs (80), was particularly significant for analyzing the data in this report. The number of vocational educators known to be employed in these three types of institutions was considerably higher than indicated in Table 2-2. It is known that initial efforts did not include all of these programs within the state. Since the compilation of the data in this report, a substantially larger percentage of responses have been received.

The data depicted in Table 2-3 are presented in a univariate frequency distribution format in order to illustrate the high level of educational attainment of the persons who responded to this item. It should be noted that fully 78.3% of those educators reported having completed more than a bachelor's degree program.

Table 2-4 presents a breakdown of the respondents by ethnic backgrounds. If this distribution was, in fact, representative of the total population of vocational

TABLE 2-1

DISTRIBUTION OF PERSONNEL BY OCCUPATIONAL TITLE

Occupational Title	Absolute Frequency	Relative Frequency (Percent)	Adjusted Frequency (Percent)
Teacher	7872	80.5	81.0
Voc. Counselor, Career Adviser	355	3.6	3.7
Work Experience Coordinator	386	3.9	4.0
School Coordinator	990	10.1	10.1
District Supervisor	100	1.0	1.0
County Supervisor	21	0.2	0.2
Total	9724	99.3	100.0

Valid observations - 9724
Missing observations - 60

TABLE 2-2

DISTRIBUTION OF PERSONNEL BY TYPE OF SCHOOL

Type of School	Absolute Frequency	Relative Frequency (Percent)	Adjusted Frequency (Percent)
Junior High	892	9.1	9.1
Senior High	4006	40.9	40.9
Comm. College	3977	40.6	40.6
Skill Center	45	0.5	0.5
ROP & ROC	459	4.7	4.7
Adult School	311	3.2	3.2
Apprenticeship Program	80	0.8	0.8
Correctional Facility	14	0.1	0.1
Total	9784	100.0	100.0

Valid observations - 9784
Missing observations - 0

TABLE 2-3

DISTRIBUTION OF PERSONNEL BY EDUCATIONAL LEVEL

Highest Level of Education	Absolute Frequency	Relative Frequency (Percent)	Adjusted Frequency (Percent)
High School Diploma	195	2.0	2.0
Comm. College Courses	366	3.7	3.8
AA degree	328	3.4	3.4
College or Univ. Credit	812	8.3	8.3
BA/BS degree	378	3.9	3.9
BA plus add'l units	3736	38.2	38.4
MA degree	666	6.8	6.8
MA plus add'l units	3099	31.7	31.8
Doctor's Degree	160	1.6	1.6
Total	9740	99.6	100.0

Valid observations - 9740
Missing observations - 44

TABLE 2-4

DISTRIBUTION OF PERSONNEL BY ETHNIC BACKGROUND

Ethnic Background	Absolute Frequency	Relative Frequency (Percent)	Adjusted Frequency (Percent)
Decline to Specify	794	8.1	8.1
American Indian	55	0.6	0.6
Asian	229	2.3	2.3
Black	270	2.8	2.8
Spanish Surname	268	2.7	2.7
White	8117	83.0	83.0
Other, non-white	51	0.5	0.5
Total	9784	100.0	100.0

Valid observations - 9784
Missing observations - 0

educators in California, then the low percentage of ethnic minorities may be an indictment of recruiting, selection, and retention programs of some, if not all, of the state's schools and/or school districts. Even if the 8.1% who declined to specify their ethnic background were *all* considered to be some type of ethnic minority, the new distribution would still differ significantly from the population of all of the state's residents.

Table 2-7 illustrates the breakdown of vocational educators by area of teaching. It is interesting to note that literally every one of the respondents identified with one of the nine possible responses. Presumably, those persons who checked "none" for this item are vocational counselors, work experience coordinators, district supervisors, etc.; i.e., they were not teachers, per se. Many of these administrative or support personnel, even though they no longer taught, still identified with a particular area of teaching.

The remainder of this section focuses on four variables which were measured by the survey questionnaire. These variables were: 1) educational level, 2) area of teaching, 3) occupational titles of the respondents, and 4) the ethnic backgrounds of respondents. These four variables were not selected, *a priori*, but in response to the

TABLE 2-5

DISTRIBUTION OF PERSONNEL BY YEARS OF TEACHING EXPERIENCE

Teaching Experience (years)	Absolute Frequency	Relative Frequency (Percent)	Adjusted Frequency (Percent)
0 - 4	2630	26.9	27.6
5 - 9	2491**	25.5	26.2
10 - 14	1806	18.4	19.0
15 - 19	1268	13.0	13.3
20 - 24	782	8.0	8.2
25 - 29	324	3.3	3.4
30 - 34	155	1.6	1.6
35 - 39	46	0.5	0.5
40 & over	20	0.2	0.2
Total	9522*	97.4	100.0

* Of the 9,784 persons who returned the questionnaire, 262 did not give any indication of the number of years of teaching experience they had.

** The "true" median is 8.5 years of teaching experience. Grouping the data into the above 5-year class intervals inflates the median slightly to 8.8 years.

TABLE 2-6

DISTRIBUTION OF PERSONNEL BY YEARS OF WORK EXPERIENCE

Work Experience (years)	Absolute Frequency	Relative Frequency (Percent)	Adjusted Frequency (Percent)
0 - 4	3076	31.4	31.8
5 - 9	2126**	21.7	22.0
10 - 14	1589	16.2	16.4
15 - 19	1037	10.6	10.7
20 - 24	873	8.9	9.0
25 - 29	499	5.1	5.2
30 - 34	312	3.2	3.2
35 - 39	109	1.1	1.1
40 & over	63	0.6	0.6
Total	9684*	98.8	100.0

* Of the 9,784 persons who returned the questionnaire, 100 did not give any indication of the number of years of work experience they had in an area related to their area of teaching

** The "true" median is 8.2 years of work experience in an area related to the respondents' area of teaching. Grouping the data into the above 5-year class intervals inflates the median to 8.7 years.

TABLE 2-7

DISTRIBUTION OF PERSONNEL

BY AREA OF TEACHING

Area of Teaching	Absolute Frequency	Relative Frequency (Percent)	Adjusted Frequency (Percent)
None	671	6.9	6.9
Agriculture	437	4.5	4.5
Business & Office Occupations	2732	27.9	27.9
Consumer & Home-making Education	1005	10.1	10.1
Distributive Education	179	1.8	1.8
Health	819	8.4	8.4
Home Economics Related	388	4.0	4.0
Industrial Arts	1415	14.5	14.5
Trade and Technical	2138	21.9	21.9
Total	9784	100.0	100.0

Valid observations - 9784
Missing observations - 0

TABLE 2-8

DISTRIBUTION OF PERSONNEL BY AGE GROUPS

Age Group in years	Absolute Frequency	Relative Frequency (Percent)	Adjusted Frequency (Percent)
20 - 24	36	0.4	0.4
25 - 29	824	8.4	9.1
30 - 34	1215	12.4	13.4
35 - 39	1412	14.4	15.6
40 - 44	1417**	14.5	15.7
45 - 49	1334	13.6	14.8
50 - 54	1411	14.4	15.6
55 - 59	892	9.1	9.9
60 - 64	402	4.1	4.4
65 & over	100	1.0	1.1
Total	9043*	92.3	100.0

* Of the 9,784 persons who returned the questionnaire, 741 did not indicate their year of birth.

** The median age for the 9,043 persons who responded to the item requesting year of birth is 43.1 years.

TABLE 2-9

DISTRIBUTION OF PERSONNEL
BY EMPLOYMENT STATUS

Employment Status	Absolute Frequency	Relative Frequency (Percent)	Adjusted Frequency (Percent)
Part-time	1946	19.9	20.0
Full-time	7760	79.3	80.0
Total	9706	99.2	100.0

Missing observations - 78

TABLE 2-10.

DISTRIBUTION OF PERSONNEL
BY SEX

Sex	Absolute Frequency	Relative Frequency (Percent)	Adjusted Frequency (Percent)
Male	6213	63.5	63.5
Female	3567	36.5	36.5
Total	9780	100.0	100.0

Missing observations - 4

picture which seemed to be developing as the data analysis phase of the study progressed. That picture pointed towards utilization of those four variables for constructing a nearly complete profile description of California's vocational educators. Even more important than a profile description was the composite which emerged when all variables were included. This composite can be used to identify problem and potential problem areas which legislators, administrators, teacher training institutions, and others who will influence the future of vocational education in California will undoubtedly want to consider.

EDUCATIONAL LEVEL

The educational levels reported by the respondents was much higher than expected. The high number (over 82%) who indicated that they hold at least a bachelor's degree would appear to confirm the trend towards more education reported by Barlow in an earlier study.[6]

Even more important than the number of baccalaureates was the number (40.1% of the sample) who reported holding at least a master's degree. These educators, in pursuing graduate *degree* programs, obviously went

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[6]Barlow and Reinhart. Profiles of Trade and Technical Teachers: Comprehensive Report 1968.

beyond the nominal credentialing requirements. Although no comparisons of vocational educators with teachers of so-called "academic" subjects were made in this study, one cannot help but speculate as to how well vocational educators measure up.

An analysis of respondents' replies to survey items other than educational level provided some insight into possible explanations for their unexpectedly high educational levels. When vocational educators were grouped, e.g., by type of school *and* educational level as shown in Table 2-11, the correlation between advanced degrees and type of schools in which employed is obvious. Examination of Table 2-11 disclosed that over 88% of those respondents who held either a master's degree or a master's degree plus some additional units were employed in senior high schools or in community colleges. Additionally, these two types of institutions employed fully 94% of the respondents who reported holding a doctor's degree. On the other side of the coin, however, correctional facilities and apprenticeship programs accounted for less than 0.25% of all those educators who held advanced degrees.

Grouping the respondents by educational level and ethnic background as shown in Table 2-12 yielded significant ($\chi^2 = 163.1$ for d.f. = 64) differences

TABLE 2-11

DISTRIBUTION BY TYPE OF SCHOOL AND BY EDUCATIONAL LEVEL

Type of School	High School diploma	Junior College courses	AA degree	College or University courses	BA or BS degree
Junior High	1	0	2	7	25
Senior High	13	34	38	96	90
Junior College	77	242	218	522	200
Skill Center	3	5	5	9	4
ROP/ROC	48	47	42	101	27
Adult School	25	22	15	59	28
Apprentice-ship programs	28	15	8	17	4
Correctional Facility	0	1	0	1	0
Total	195	366	328	812	378

Valid observations - 9740
Missing observations - 44

TABLE 2-11 (continued)

BA plus additional units	MA or MS degree	MA plus additional units	Ed.D. or Ph.D. degree	Total
576	43	230	[illegible]	888
2130	237	1343	17	3993
795	353	1415	134	3956
16	0	3	0	45
102	13	68	2	450
106	15	37	3	310
5	1	1	0	79
6	4	2	0	14
3736	666	3099	160	9740

TABLE 2-12

DISTRIBUTION BY EDUCATIONAL LEVEL AND BY ETHNIC BACKGROUND

Educational Level	Decline to state	American Indian	Asian	Black
High School diploma	12	1	0	4
Community College courses	24	3	6	10
AA degree	24	2	9	13
College or University courses	62	9	12	28
BA or BS degree	26	2	8	13
BA plus additional units	300	12	106	124
MA or MS degree	54	2	21	24
MA plus additional units	279	23	62	52
Ed.D. or Ph.D. degree	6	0	3	2
Total	787	54	227	270

Valid observations - 9740
Missing observations - 44

TABLE 2-12 (continued)

Spanish Surname	Other, White	Other, Non-White	Total
19	156	3	195
25	296	2	366
17	262	1	328
36	658	7	812
10	317	2	378
84	3093	17	3736
18	546	1	666
54	2613	16	3099
3	246	0	160
266	8087	49	9740

Chi Square = 163.12788

among these variables. Correct interpretation of the significance of that value of χ^2, however, is important. One might be tempted to conclude that there was a disproportionately low number of advanced degrees held by the ethnic minorities. This was not the case; ethnic minorities comprised 17% of the sample but, at the same time, they held almost 16% of the advanced degrees. What really caused χ^2 to achieve significance in this case was the disproportionate distribution of *less* than college degree educational levels among the various ethnic groups.

Table 2-13, which contrasts educational level by area of teaching, yields very highly significant differences ($\chi^2 = 3249.3$ for d.f. = 64) among these two variables. It should be noted here that over 54% of that value of χ^2 was directly attributable to the differences between expected and observed values for the cells occupied by trade and technical educators. In general, the number of trade and technical educators who held baccalaureate or advanced degrees was slightly lower than were their counterparts from other areas of teaching. At the same time, the number of trade and technical educators who held less than a baccalaureate degree was far greater than the number of other vocational educators with similar educational levels.

Business and office occupations educators also

contributed to the significance of X^2 in Table 2-13. However, their influence was in the opposite direction; i.e., they revealed a significantly lower number of persons with less than a baccalaureate degree and a significantly greater number who held a master's degree plus some additional units.

Table 2-14 presents the distribution of vocational educators by occupational title and their level of education. Again, the value of X^2 associated with this distribution was highly significant (X^2 = 611.8 with 40 degrees of freedom). It is unlikely that the small number who declined to state their educational levels (41 teachers and 3 school coordinators) would have influenced the significance of that statistical parameter.

The distribution shown in Table 2-14, although appearing to point towards a correlation between academic level of achievement and occupational title, should not by itself be interpreted that way. Such a correlation can be justified only after possible interacting factors such as type of school, area of teaching, etc., are accounted for. These factors are addressed in more detail in a later section of this report.

The educational level of the respondents was also contrasted with their employment status, as shown in Table 2-15. The correlation between these two variables was

TABLE 2-13

DISTRIBUTION BY EDUCATIONAL LEVEL
AND BY AREA OF TEACHING

Educational Level	None	Agri-culture	Business and Office	Consumer Ed.	Distrib-Ed.
High School diploma	6	0	12	2	1
Community College courses	2	4	39	2	5
AA degree	14	2	18	2	7
College or University courses	13	5	82	9	12
BA or BS degree	10	16	78	30	3
BA plus additional units	177	156	1103	694	57
MA or MS degree	52	38	188	50	13
MA plus additional units	370	209	1158	212	77
Ed.D. or Ph.D degree	22	6	49	2	4
Total	666	436	2727	1003	179

Valid observations - 9740
Missing observations - 44

TABLE 2-13 (continued)

Health	Home Economics related	Industrial Arts	Trade and Technical	Total
5	4	11	154	195
32	11	24	247	366
46	13	22	204	328
119	17	76	479	812
65	16	47	113	378
218	202	709	420	3736
108	30	74	113	666
191	90	437	355	3099
26	5	8	38	160
810	388	1408	2123	9740

Chi Square = 3249.31470

TABLE 2-14

DISTRIBUTION BY OCCUPATIONAL TITLE AND BY EDUCATIONAL LEVEL

Title	High School diploma	Junior College courses	AA degree	College or University courses	BA or BS degree
Teacher	176	342	306	750	350
Vocational Counselor	5	0	1	4	0
Work Experience Coordinator	1	6	6	15	2
School Coordinator	2	10	11	37	23
District Supervisor	0	0	1	2	0
County Supervisor	1	0	0	0	0
Total	185	358	325	808	375

Valid observations - 9680
Missing observations - 104

Chi Square = 611.78052

TABLE 2-14 (continued)

BA plus additional units	MA or MS degree	MA plus additional units	Ed.D or Ph.D. degree	Total
3119	534	2150	104	7831
91	31	214	9	355
132	25	194	5	386
366	66	442	30	987
14	5	75	3	100
4	2	11	3	21
3726	663	3086	154	9680

TABLE 2-15

DISTRIBUTION BY EDUCATIONAL LEVEL AND BY EMPLOYMENT STATUS

Educational Level	Part-time	Full-time	Total
High School diploma	107	84	191
Community College courses	200	161	361
AA degree	142	178	320
College or University courses	275	533	808
BA or BS degree	160	218	378
BA plus additional units	537	3172	3709
MA or MS degree	145	515	660
MA plus additional units	314	2765	3079
Ed.D or Ph.D. degree	46	113	159
Total	1926	7739	9665

Valid observations - 9665 Chi Square = 1041.63062
Missing observations - 119

amply illustrated by the value of X^2 associated with this distribution (X^2 = 1041.6 with d.f. = 8). Vocational educators who reported full-time employment were much more likely to hold at least a baccalaureate degree than their counterparts who reported being employed part-time. Similarly, an analysis of Table 2-15 shows that the number of vocational educators who reported part-time employment and a level of educational attainment below the baccalaureate degree level was significantly greater than the expected value of such a grouping.

Finally, the educational levels of the respondents were contrasted with their teaching experience (see Table 2-16). Again, the results were statistically significant (X^2 = 1173.9 with d.f. = 64).

Several interacting factors tend to confound the possible interpretations of the data contained in Table 2-16. These factors include for example, the educational mobility of vocational educators, their work experience in occupations related to their area of teaching, etc. Nevertheless, for whatever reasons the data clearly illustrate the high level of academic achievement of vocational educators who reported their teaching experience to be equal to or greater than the median (8.5 years).

TABLE 2-16

DISTRIBUTION BY EDUCATIONAL LEVEL AND BY YEARS OF TEACHING EXPERIENCE

Educational Level	Teaching Experience (years)					
	0 - 4	5 - 9	10-14	15-19	20-24	25-29
High School diploma	98	43	22	13	7	1
Community College courses	191	97	39	14	6	1
AA degree	165	91	42	14	4	0
College or University courses	292	250	124	71	34	17
BA or BS degree	145	93	66	36	10	11
BA plus additional units	1153	1021	664	401	238	98
MA or MS degree	190	174	121	81	51	19
MA plus additional units	342	680	687	610	415	172
Ed.D. or Ph.D. degree	41	30	36	24	16	4
Total	2617	2479	1801	1264	781	323

Valid observations - 9485
Missing observations - 299

TABLE 2-16 (continued)

	30-34	35-39	40-44	Total
	1	0	0	185
	3	0	0	351
	2	0	0	318
	7	0	2	797
	2	0	0	363
	47	20	6	3648
	4	1	0	641
	85	23	12	3026
	4	1	0	156
	155	45	20	9485

Chi Square = 1173.87671

AREA OF TEACHING

As noted earlier, the data in Table 2-7 illustrate the distribution of vocational educators by their areas of teaching. Table 2-7 also illustrates the wide range which characterized the number of vocational educators who identified with each of those teaching areas. Business and office occupations educators, the largest group, accounted for nearly 28% of all the respondents while the smallest, distributive education accounted for less than 2%. Four areas: Business and Office Occupations, Trade and Technical Education, Industrial Arts, and Consumer and Homemaking Education accounted for nearly 75% of all vocational educators who responded to the questionnaire.

Although this study report cites the existence of the above differences, it has not sought to explain those differences. A variety of explanations, such as variations in demand for different curricula, variations in student-to-teacher ratios, etc., can all be cited as contributing to their existence. The intent has been to consider the responses of vocational educators to survey items *other* than "Area of Teaching" with the idea that those responses, when contrasted with the former, would provide a clearer picture of the conditions characterizing California's vocational educators. It is hoped that insights will develop as a result of viewing that picture from expanded

perspectives, to enable improved planning and assessment of the needs of tomorrow's vocational educators.

Table 2-17 presents the distribution of vocational educators grouped by their areas of teaching and ethnic backgrounds. The level of significance associated with this distribution (X^2 = 144.37079 with 48 degrees of freedom) should be interpreted with a measure of caution. Over 10% of the respondents declined to specify their ethnic backgrounds and it can only be speculated as to the possible effects on that level of significance if the non-respondents had elected to state an ethnic background.

A certain amount of interpretation of the data in Table 2-17 is justified. For example, the obvious under-representation of ethnic minorities in some areas of teaching can be pointed to. None of the 55 respondents who reported being American Indians identified with agriculture or home economics-related occupations, and only one Black claimed distributive education as his area of teaching. Distributive education, which accounted for the smallest number of vocational educators, can also be cited as employing the smallest percentage (12.3%) of ethnic minorities. Business and office occupations and trade and technical education accounted for the greatest percentage of ethnic minorities. Nearly 51% of all ethnic mnnorities identified with these two teaching areas.

TABLE 2-17

DISTRIBUTION BY AREA OF TEACHING
AND BY ETHNIC BACKGROUND

Area of Teaching	Decline to Specify	American Indian	Asian	Black
None	57	3	6	30
Agriculture	51	0	8	5
Business & Office	208	15	81	65
Consumer Homemaking	57	4	38	27
Distributive Education	12	2	2	1
Health	73	7	23	27
Home Economics related	29	0	11	21
Industrial Arts	144	13	31	40
Trade & Technical	163	11	29	54
Total	794	55	229	270

Valid observations - 9784
Missing observations - 0

Chi Square = 144.37079

TABLE 2-17 (continued)

Spanish Surname	Other White	Other Non-White	Total
20	553	2	671
5	367	1	437
73	2278	12	2732
15	861	3	1005
5	157	0	179
9	673	7	819
4	322	1	388
50	1127	10	1415
87	1779	15	2138
268	8117	51	9784

The distribution of vocational educators grouped by their years of teaching experience and areas of teaching is illustrated in Table 2-18. Again, the value of X^2 associated with this distribution was highly significant. Furthermore, it is unlikely that the 262 respondents who did not reply to either one or the other of the two variables would have influenced the significance of that distribution.

What might be considered important in trying to analyze the data in Table 2-18 is the peculiar distribution displayed by vocational educators in trade and technical education and in the business and office occupations teaching areas. The teaching experience level of respondents who identified with trade and technical education was considerably less than the mean for all areas, while business and office occupations educators reported a level well above the mean. Simply because of the limited scope of variables on which data were collected, no satisfactory explanation can be offered for explaining the existence of such a phenomenon. One must, however, consider the possible implications of such a finding.

Vocational educators, in fulfilling credentialing requirements for the variety of occupational titles they hold, have amassed considerable work experience in occupations related to their area of teaching. However, when grouped by those areas of teaching, it is readily

apparent that they differed markedly in the amount of work experience each brought to their educational roles. The extreme variance in "on the job' experience reported by the respondents is dramatically illustrated in Table 2-19 and is reflected in the value of Chi Square associated with the distribution (X^2 = 1851.16 with d.f. = 64). Although the "average" vocational educator reported slightly less than 10.5 years of work experience, the *range*[2] of that variable was over 10.6 years. The average consumer and homemaking educator had the least amount of work experience (6.2 years), while the average trade and technical educator reported having over 16.8 years of experience in an occupation related to his area of teaching.

The distribution of male and female vocational educators grouped by area of teaching and occupational title is shown in Table 2-20 (males) and in Table 2-21 (females). These tables show that, in terms of total numbers, males outnumbered females by nearly a 2:1 ratio. However, when these totals are broken down into areas of teaching and/or by occupational titles, it can readily be seen that, with few exceptions, vocational education has been definitely dominated by men.

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[2] In this context, range is defined in terms of the means, i.e., it is the difference between the highest mean and the lowest means.

TABLE 2-18

DISTRIBUTION BY YEARS OF TEACHING EXPERIENCE AND BY AREA OF TEACHING

Teaching Experience (years)	None	Agri-culture	Business & Office	Consumer and Home-making	Distrib-utive
0 - 4	119	159	614	244	62
5 - 9	137	107	689	279	51
10-14	132	44	521	193	28
15-19	114	49	417	124	19
20-24	83	39	251	76	7
25-29	38	20	92	36	6
30-34	14	7	56	13	1
35-39	8	1	20	5	1
40 & over	3	0	7	4	0
Total	648	426	2667	974	175

Valid observations - 9522
Missing observations - 262

TABLE 2-18 (continued)

Health	Home Economics related	Industrial Arts	Trade and Technical	Total
288	104	327	713	2630
243	93	293	599	2491
139	84	309	356	1806
64	51	203	227	1268
38	18	153	117	782
12	12	66	42	324
8	10	25	21	155
0	0	7	4	46
0	1	4	1	20
792	373	1387	2080	9522

Chi Square = 404.26709

TABLE 2-19

DISTRIBUTION BY YEARS OF WORK EXPERIENCE AND BY AREA OF TEACHING

Work Experience (years)	None	Agri-culture	Business & Office	Consumer and Home-making	Distrib-utive Ed.
0 - 4	273	114	992	642	37
5 - 9	127	103	743	133	58
10-14	104	93	413	93	25
15-19	52	45	229	50	25
20-24	49	33	187	29	21
25-29	22	22	79	21	6
30-34	14	17	38	12	6
35-39	4	3	12	4	0
40 & over	2	3	12	5	1
Total	647	433	2705	989	179

Valid observations - 9684
Missing observations - 100

TABLE 2-19 (continued)

Health	Home Economics related	Industrial Arts	Trade & Technical	Total
122	174	540	182	3076
218	70	338	336	2126
158	59	210	434	1589
118	33	107	378	1037
95	17	98	304	873
61	14	53	221	499
28	12	43	142	312
8	1	11	66	109
7	2	7	24	63
815	382	1407	2127	9684

Chi Square = 1851.16211

TABLE 2-20

DISTRIBUTION OF MALE EDUCATORS BY OCCUPATIONAL TITLE BY AREA OF TEACHING

Area of Teaching	Teacher	Counselor or Advisor	Work Experience Coordinatcr	School Coordinator	District Supervisor	County Supervisor	Total
None	110	162	103	42	45	6	468
Agriculture	355	4	8	48	8	2	425
Business & Office	1239	20	92	189	15	1	1556
Consumer & Homemaking	10	2	5	5	0	0	22
Distributive Education	109	2	28	10	2	0	151
Health	112	5	5	27	0	0	149
Home Ec. related	26	1	0	1	0	0	28
Industrial Arts	1198	25	24	152	4	1	1404
Trade and Technical	1744	21	44	131	16	9	1965
Total	4903	242	309	605	90	19	6168

Valid observations - 6168

Chi Square = 2162.05884

TABLE 2-21

DISTRIBUTION OF FEMALE EDUCATORS BY OCCUPATIONAL TITLE BY AREA OF TEACHING

Area of Teaching	Teacher	Counselor or Advisor	Work Experience Coordinator	School Coordinator	District Supervisor	County Supervisor	Total
None	72	76	19	16	2	1	186
Agriculture	8	1	0	1	0	0	10
Business & Office	1005	22	34	108	3	0	1172
Consumer & Homemaking	805	9	4	161	4	0	983
Distributive Education	19	1	3	3	0	0	26
Health	596	2	6	56	1	1	662
Home Ec. related	321	2	8	27	0	0	358
Industrial Arts	7	0	0	0	0	0	7
Trade and Technical	133	0	3	12	0	0	148
Total	2966	113	77	384	10	2	3552

Valid observations - 3552

Chi Square = 1081.31665

The distribution of male and female vocational educators by area of teaching apparently reflected the traditional stereotyping of certain jobs with a particular sex. The effects of such stereotyping were particularly noticeable in, for example, industrial arts, where men outnumbered women by a ratio of over 200:1. Similarly, and presumably for the same reasons, women outnumbered men by a ratio of over 40:1 in areas such as Consumer and Homemaking Education.

OCCUPATIONAL TITLE

One of the objectives of the study was to identify, by occupational title, all of the vocational educators employed in the state's public education system. To accomplish this objective, respondents were asked to check one of six occupational titles on the questionnaire, titles which are defined in the State Plan.[8] All but 60 of the 9,784 respondents identified with one of those six titles.

A variety of computer analyses were conducted on the responses to the occupational title item. These analyses included cross-tabulations and comparisons by area of teaching, by sex, by ethnic background, and by years of

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[8]California State Plan for Vocational Education (California State Department of Education, Sacramento, 1972) Sec. 1.3

teaching experience. Although other analyses were not ruled out and can be conducted at any future time, the above comparisons provided the information which was considered necessary for this preliminary report.

Tables 2-20 and 2-21, which were referred to in an earlier discussion, present the distribution of male and female educators grouped by area of teaching and occupational title. Just as the distribution of vocational educators by area of teaching did not disclose completely unexpected results, so too, the distribution by occupapational title held no real surprises. The male-to-female ratio for teachers, vocational counselors, and school coordinators approximated the ratio found in their total numbers, i.e., approximately 2:1. However, the data showed that there were nearly four times as many male work experience coordinators as females who claimed that occupational title. At the supervisory level outside the usual confines of the school, i.e., District Supervisors and County Supervisors, men outnumbered women by a ratio of more than 9 :1.

It is unfortunate that there have been no longitudinal studies available with which to compare the above data for evidence of change. Were such studies available, it is highly probable that a comparison would show the relatively transient nature of these differences. Recent changes in

societal pressures, not the least of which is the Womens' Liberation movement, will almost certainly result in a reduction of these highly disproportionate ratios.

Table 2-22, which contrasts vocational educators by their occupational titles and years of teaching experience is presented here in order to illustrate the extreme variance in teaching experience among the different educators. Teachers, who made up the majority of the sample, had the least teaching experience (9.7 years). District supervisors had the greatest (16.0 years), but vocational counselors were not far behind, reporting 14.0 years of teaching experience. Although the temptation to use this data to link job mobility to teaching experience exists, one should be extremely cautious in trying to establish that connection based solely on the data in Table 2-22.

ETHNIC BACKGROUND

The "democratization of education" was one of the benefits which early proponents of vocational education claimed would occur with the widespread acceptance of vocational education. It would therefore be expected that vocational educators, more than other types of teachers, would epitomize the notion of equality. In order to test this hypothesis, the responses of vocational

TABLE 2-22

DISTRIBUTION OF OCCUPATIONAL TITLES BY YEARS OF TEACHING EXPERIENCE

Teaching Experience (years)	Teacher	Counselor or Advisor	Work Experience Coordinator	School Coordinator	District Supervisor	County Supervisor	Total
0 - 4	2385	59	74	87	2	3	2610
5 - 9	2061	62	104	222	20	7	2476
10-14	1401	61	72	240	24	2	1800
15-19	908	73	61	195	21	4	1262
20-24	536	44	42	137	16	4	779
25-29	221	22	18	50	10	0	321
30-34	110	11	6	23	2	0	152
35-39	25	11	0	9	1	0	46
40 & over	13	2	0	4	1	0	20
Total	7660	345	377	967	97	20	9466

Valid observations - 9466
Missing observations - 318

Chi Square = 512.93164

educators in the present study were contrasted with a number of other variables, which included occupational title, area of teaching, level of education, type of school in which employed, etc. Some of the resulting comparisons have already been examined in previous sections of this report.

Table 2-23 presents the distribution of occupational titles of the respondents by their ethnic backgrounds. Again, the level of significance ($p \leq 0.0007$) which marked this distribution was undoubtedly influenced by the vast majority of white respondents. Nevertheless, it should be noted that, with the exception of five district supervisors who had Spanish surnames, not a single supervisorial position outside the schools was held by an ethnic minority. Additionally, Table 2-23 clearly shows that the vast majority of vocational educators who were from an ethnic minority background were found in the classrooms-787 of the 862 ethnic minorities were teachers.

As noted earlier, even if those persons who declined to specify their ethnic backgrounds or occupational titles all proved to be some type of ethnic minority, the resulting distribution would still be highly skewed.

Table 2-24 presents the distribution of respondents by their ethnic backgrounds and type of school in which they were employed. The picture portrayed by this distribution

TABLE 2-23

DISTRIBUTION OF OCCUPATIONAL TITLES BY ETHNIC BACKGROUND

Ethnic Background	Teacher	Counselor or Advisor	Work Experience Coordinator	School Coordinator	District Supervisor	County Supervisor	Total
Decline to Specify	650	25	42	66	4	1	788
American Indian	48	1	1	5	0	0	55
Asian	202	5	5	16	0	0	228
Black	218	20	5	26	0	0	269
Spanish Surname	223	8	13	12	5	0	261
Others, White	6485	294	320	864	91	20	8074
Others, Non-white	46	2	0	1	0	0	49
Total	7872	355	386	990	100	21	9724

Valid observations - 9724
Missing observations - 60

Chi Square = 60.89519

TABLE 2-24

DISTRIBUTION BY TYPE OF SCHOOL
AND BY ETHNIC BACKGROUND

Type of School	Decline to Specify	American Indian	Asian	Black
Junior High School	88	4	33	51
Senior High School	334	22	111	97
Community College	307	23	69	99
Skill Center	4	1	0	5
ROP & ROC	36	2	6	11
Adult School	22	3	8	6
Apprenticeship Programs	2	0	2	1
Correctional Facilities	1	0	0	0
Total	794	55	229	270

Valid observations - 9784

Chi Square = 176.88989

TABLE 2-24 (continued)

Spanish Surname	Other, White	Other, Non-white	Total
15	698	3	892
95	3328	19	4006
100	3356	23	3977
8	27	0	45
35	366	3	459
12	259	1	311
3	70	2	80
0	13	0	14
268	8117	51	9784

was an encouraging one. Three levels of schools: junior high schools, senior high schools, and community colleges accounted for the employment of 90.7% of all the respondents. These three types of schools also employed fully 89% of all ethnic minorities. Likewise, more than 10% of the respondents employed in apprenticeship programs represented an ethnic minority.

The data in Table 2-24 indicate that no ethnic minorities were employed in correctional facilities. However, there should be no hasty attempt to draw any conclusions from that apparently biased distribution. The 14 respondents who reported employment in correctional facilities represented only a fraction of those vocational educators known to be employed in such institutions. It is very likely when the remainder of the responses to the questionnaires are received and analyzed, the resulting distribution will differ markedly from what is now displayed in Table 2-24.

ADDITIONAL COMPARISONS

Vocational educators were asked to indicate the number and types of teaching credentials they held. Their responses to this item on the questionnaire were then crosstabulated with the types of schools in which employed in order to determine the distribution of clear and provisional credentials by type of school. These distributions,

Tables 2-25 through 2-28, summarize these crosstabulations, while Tables 2-29 through 2-48 present individual distributions. Additionally, Tables 2-29 through 2-48 show the values of Chi Square associated with each particular distribution and the level of significance of that value of Chi Square.

Again, a word of caution concerning interpreting levels of significance is in order. In virtually every case in which Chi Square would seem to indicate a significant difference, this difference was directly attributable to the distribution of provisional credentials. For example, in Table 2-30, where Chi Square is significant at the 0.0000 level, almost 93% of that value of Chi Square was a result of the difference between expected and observed values of the number of educators holding provisional credentials. The number of agriculture and of business and office occupations educators holding only a provisional credential was much lower than the expected number, while the number of trade and technical, home economics, and consumer & homemaking educators was much higher than their expected values. In that particular distribution, trade and technical educators alone accounted for fully 33% of the calculated value of Chi Square.

TABLE 2-25 DISTRIBUTION OF CLEAR CREDENTIALS BY TYPE OF SCHOOL

	Junior High	Senior High	Comm'ty College	Skill Center	ROP & ROC	Adult School	Appren. Prog'm	Correct. Facility	Row Total
Elementary	165	193	127	3	27	20	3	1	539
Secondary	521	2570	806	6	98	53	4	10	4068
Special Secondary	272	1079	615	4	49	39	3	6	2067
Junior College	35	270	1568	6	36	26	15	1	1957
SDS	80	647	1254	15	134	95	25	1	2251
Adult Education	30	150	192	9	41	110	7	2	541
Special Education	11	58	40	1	4	3	3	0	120
Health Services	4	25	64	2	5	2	0	0	102
Supervision	16	99	334	1	26	4	0	0	480
Admin.	55	261	201	0	25	8	0	2	552
Column Total	1189	5352	5201	47	445	360	60	23	12677

TABLE 2-26 DISTRIBUTION OF PROVISIONAL CREDENTIALS BY TYPE OF SCHOOL

	Junior High	Senior High	Comm'ty College	Skill Center	ROP & ROC	Adult School	Appren. Prog'm	Correct. Facility	Row Total
Elementary	21	26	11	0	2	6	1	0	67
Secondary	53	197	32	3	18	8	1	0	312
Special Secondary	14	34	33	1	11	7	1	0	101
Junior College	11	69	286	3	24	7	4	1	405
SDS	24	196	202	9	151	25	11	1	619
Adult Education	3	28	31	2	19	21	4	0	108
Special Education	3	9	17	0	6	3	1	0	39
Health Services	0	3	13	0	4	0	0	0	20
Supervision	9	70	61	1	20	5	2	0	168
Admin.	30	108	38	2	9	3	0	1	191
Column Total	168	740	724	21	264	85	25	3	2030

TABLE 2-27

DISTRIBUTION OF CLEAR CREDENTIALS BY AREA OF TEACHING

Type of Credential	None	Agri-culture	Business & Office	Distribu-tive Ed.	Health
Elementary	134	9	113	7	25
Secondary	390	291	1550	77	82
Special Secondary	79	175	401	20	120
Junior College	135	56	578	50	289
SDS	116	52	386	54	277
Adult Education	22	19	160	10	32
Special Education	16	2	20	1	8
Health Services	4	0	7	1	78
Supervision	87	12	80	6	49
Admin.	141	24	190	12	14
Column Totals	1124	640	3485	238	974

TABLE 2-27 (continued)

Consumer & Homemaking	Home Ec. related	Industrial Arts	Trade and Technical	Row Total
64	48	94	45	539
542	136	745	255	4068
344	99	525	304	2067
69	85	116	579	1957
105	72	321	868	2251
47	37	68	146	541
21	8	16	28	120
2	0	6	4	102
8	10	47	181	480
18	10	84	59	552
1220	505	2022	2469	12677

TABLE 2-28

DISTRIBUTION OF PROVISIONAL CREDENTIALS BY AREA OF TEACHING

Type of Credential	None	Agri-culture	Business & Office	Distributive Ed.	Health
Elementary	13	0	12	0	2
Secondary	14	12	93	5	10
Special Secondary	4	6	17	2	11
Junior College	15	11	67	11	66
SDS	21	10	57	6	92
Adult Education	2	4	17	1	8
Special Education	1	2	5	3	4
Health Services	0	0	1	0	15
Supervision	19	9	32	4	20
Admin.	39	9	51	7	7
Column Totals	128	63	352	40	235

TABLE 2-28 (continued)

Consumer & Homemaking	Home Ec. related	Industrial Arts	Trade and Technical	Row Total
15	9	9	7	67
57	18	63	39	312
10	3	23	25	101
15	19	44	157	405
13	19	112	289	619
11	8	20	37	108
1	2	6	15	39
0	1	0	3	20
4	3	27	50	168
12	3	42	21	191
138	85	346	643	2030

TABLE 2-29

DISTRIBUTION OF "ELEMENTARY" CREDENTIALS BY AREA OF TEACHING

Area of Teaching	Type of Credential		Total
	Provisional	Clear	
None	13	134	147
Agriculture	0	9	9
Business & Office	12	113	125
Consumer & Homemaking	15	64	79
Distributive Education	0	7	7
Health Services	2	25	27
Home Ec. related	9	48	57
Industrial Arts	9	94	103
Trade and Technical	7	45	52
Total	67	539	606

Chi Square = 10.57672 Significance = 0.2269

TABLE 2-30

DISTRIBUTION OF "SECONDARY" CREDENTIALS BY AREA OF TEACHING

Area of Teaching	Type of Credential		Total
	Provisional	Clear	
None	14	390	404
Agriculture	12	291	303
Business & Office	93	1550	1643
Consumer & Homemaking	57	542	599
Distributive Education	6	77	83
Health Services	10	82	92
Home Ec. related	18	136	154
Industrial Arts	63	745	808
Trade and Technical	39	255	294
Total	312	4068	4380

Chi Square = 47.37256 Significance = 0.0000

TABLE 2-31

DISTRIBUTION OF "SPECIAL SECONDARY" CREDENTIALS BY AREA OF TEACHING

Area of Teaching	Type of Credential		Total
	Provisional	Clear	
None	4	79	83
Agriculture	6	175	181
Business & Office	17	401	418
Consumer & Homemaking	10	344	354
Distributive Education	2	20	22
Health Services	11	120	131
Home Ec. related	3	99	102
Industrial Arts	23	525	548
Trade and Technical	25	304	329
Total	101	2067	2168

Chi Square = 16.18820 Significance = 0.0398

TABLE 2-32

DISTRIBUTION OF "JUNIOR COLLEGE" CREDENTIALS BY AREA OF TEACHING

Area of Teaching	Type of Credential		Total
	Provisional	Clear	
None	15	135	150
Agriculture	11	56	67
Business & Office	67	578	645
Consumer & Homemaking	15	69	84
Distributive Education	11	50	61
Health Services	66	289	355
Home Ec. related	19	85	104
Industrial Arts	44	116	160
Trade and Technical	157	579	736
Total	405	1957	2362

Chi Square = 47.98251 Significance = 0.0000

TABLE 2-33

DISTRIBUTION OF "STANDARD DESIGNATED SUBJECTS" CREDENTIALS BY AREA OF TEACHING

Area of Teaching	Type of Credential		Total
	Provisional	Clear	
None	21	116	137
Agriculture	10	52	62
Business & Office	57	386	443
Consumer & Homemaking	13	105	118
Distributive Education	6	54	60
Health Services	92	277	369
Home Ec. related	19	72	91
Industrial Arts	112	321	433
Trade and Technical	289	868	1157
Total	619	2251	2870

Chi Square = 51.75404 Significance = 0.0000

TABLE 2-34

DISTRIBUTION OF "ADULT EDUCATION"
CREDENTIALS BY AREA OF TEACHING

Area of Teaching	Type of Credential		Total
	Provisional	Clear	
None	2	22	24
Agriculture	4	19	23
Business & Office	17	160	177
Consumer & Homemaking	11	47	58
Distributive Education	1	10	11
Health Services	8	32	40
Home Ec. related	8	37	45
Industrial Arts	20	68	88
Trade and Technical	37	146	183
Total	108	541	649

Chi Square = 12.60468 Significance = 0.1262

TABLE 2-35

DISTRIBUTION OF "SPECIAL EDUCATION" CREDENTIALS BY AREA OF TEACHING

Area of Teaching	Type of Credential		Total
	Provisional	Clear	
None	1	16	17
Agriculture	2	2	4
Business & Office	5	20	25
Consumer & Homemaking	1	21	22
Distributive Education	3	1	4
Health Services	4	8	12
Home Ec. related	2	8	10
Industrial Arts	6	16	22
Trade and Technical	15	28	43
Total	39	120	159

Chi Square = 18.21514 Significance = 0.0190

TABLE 2-36

DISTRIBUTION OF "HEALTH SERVICES" CREDENTIALS BY AREA OF TEACHING

Area of Teaching	Type of Credential		Total
	Provisional	Clear	
None	0	4	4
Agriculture	0	0	0
Business & Office	1	7	8
Consumer & Homemaking	0	2	2
Distributive Education	0	1	1
Health Services	15	78	93
Home Ec. related	1	0	1
Industrial Arts	0	6	6
Trade and Technical	3	4	7
Total	20	102	122

Chi Square = 11.31899 Significance = 0.1253

TABLE 2-37

DISTRIBUTION OF "SUPERVISION"
CREDENTIALS BY AREA OF TEACHING

Area of Teaching	Type of Credential		Total
	Provisional	Clear	
None	19	87	106
Agriculture	9	12	21
Business & Office	32	80	112
Consumer & Homemaking	4	8	12
Distributive Education	4	6	10
Health Services	20	49	69
Home Ec. related	3	10	13
Industrial Arts	27	47	74
Trade and Technical	50	181	231
Total	168	480	648

Chi Square = 15.34393 Significance = 0.0528

TABLE 2-38

DISTRIBUTION OF "ADMINISTRATION" CREDENTIALS BY AREA OF TEACHING

Area of Teaching	Type of Credential		Total
	Provisional	Clear	
None	39	141	180
Agriculture	9	24	33
Business & Office	51	190	241
Consumer & Homemaking	12	18	30
Distributive Education	7	12	19
Health Services	7	14	21
Home Ec. related	3	10	13
Industrial Arts	42	84	126
Trade and Technical	21	59	80
Total	191	552	743

Chi Square = 13.16644 Significance = 0.1062

TABLE 2-39

DISTRIBUTION OF "ELEMENTARY" CREDENTIALS BY TYPE OF SCHOOL

Type of School	Type of Credential		Total
	Provisional	Clear	
Junior High	21	165	186
Senior High	26	193	219
Community College	11	127	138
Skill Center	0	3	3
ROP & ROC	2	27	29
Adult School	6	20	26
Apprenticeship Program	1	3	4
Correctional Facility	0	1	1
Total	67	539	606

Chi Square = 7.11319 Significance = 0.4172

TABLE 2-40

DISTRIBUTION OF "SECONDARY" CREDENTIALS BY TYPE OF SCHOOL

Type of School	Type of Credential		Total
	Provisional	Clear	
Junior High	53	521	574
Senior High	197	2570	2767
Community College	32	806	838
Skill Center	3	6	9
ROP & ROC	18	98	116
Adult School	8	53	61
Apprenticeship Program	1	4	5
Correctional Facility	0	10	10
Total	312	4068	4380

Chi Square = 44.72520 Significance = 0.0000

TABLE 2-41

DISTRIBUTION OF "SPECIAL SECONDARY" CREDENTIALS BY TYPE OF SCHOOL

Type of School	Type of Credential		Total
	Provisional	Clear	
Junior High	14	272	286
Senior High	34	1079	1113
Community College	33	615	648
Skill Center	1	4	5
ROP & ROC	11	49	60
Adult School	7	39	46
Apprenticeship Program	1	3	4
Correctional Facility	0	6	6
Total	101	2067	2168

Chi Square = 50.23203 Significance = 0.0000

TABLE 2-42

DISTRIBUTION OF "JUNIOR COLLEGE" CREDENTIALS BY TYPE OF SCHOOL

Type of School	Type of Credential		Total
	Provisional	Clear	
Junior High	11	35	46
Senior High	69	270	339
Community College	286	1568	1854
Skill Center	3	6	9
ROP & ROC	24	36	60
Adult School	7	26	33
Apprenticeship Program	4	15	19
Correctional Facility	1	1	2
Total	405	1957	2362

Cni Square = 33.62564 Significance = 0.0000

TABLE 2-43

DISTRIBUTION OF "STANDARD DESIGNATED SUBJECTS" CREDENTIALS BY TYPE OF SCHOOL

Type of School	Type of Credential		Total
	Provisional	Clear	
Junior High	24	80	104
Senior High	196	647	843
Community College	202	1254	1456
Skill Center	9	15	24
ROP & ROC	151	134	285
Adult School	25	95	120
Apprenticeship Program	11	25	36
Correctional Facility	1	1	2
	619	2251	2870

Chi Square = 225. 08690 Significance = 0.0000

TABLE 2-44

DISTRIBUTION OF "ADULT EDUCATION" CREDENTIALS BY TYPE OF SCHOOL

Type of School	Type of Credential		Total
	Provisional	Clear	
Junior High	3	30	33
Senior High	28	150	178
Community College	31	192	223
Skill Center	2	9	11
ROP & ROC	19	41	60
Adult School	21	110	131
Apprenticeship Program	4	7	11
Correctional Facility	0	2	2
Total	108	541	649

Chi Square = 15.97225 Significance = 0.0254

TABLE 2-45

DISTRIBUTION OF "SPECIAL EDUCATION"
CREDENTIALS BY TYPE OF SCHOOL

Type of School	Type of Credential		Total
	Provisional	Clear	
Junior High	3	11	14
Senior High	9	58	67
Community College	17	40	57
Skill Center	0	1	1
ROP & ROC	6	4	10
Adult School	3	3	6
Apprenticeship Program	1	3	4
Correctional Facility	0	0	0
Total	39	120	159

Chi Square = 14.61733 Significance = 0.0235

TABLE 2-46

DISTRIBUTION OF "HEALTH SERVICES" CREDENTIALS BY TYPE OF SCHOOL

Type of School	Type of Credential		Total
	Provisional	Clear	
Junior High	0	4	4
Senior High	3	25	28
Community College	13	64	77
Skill Center	0	2	2
ROP & ROC	4	5	9
Adult School	0	2	2
Apprenticeship Program	0	0	0
Correctional Facility	0	0	0
Total	20	102	122

Chi Square = 7.40787 Significance = 0.1920

TABLE 2-47

DISTRIBUTION OF "SUPERVISION" CREDENTIALS BY TYPE OF SCHOOL

Type of School	Type of Credential		Total
	Provisional	Clear	
Junior High	9	16	25
Senior High	70	99	169
Community College	61	334	395
Skill Center	1	1	2
ROP & ROC	20	26	46
Adult School	5	4	9
Apprenticeship Program	2	0	2
Correctional Facility	0	0	0
Total	168	480	648

Chi Square = 62.86165 Significance = 0.0000

TABLE 2-48

DISTRIBUTION OF "ADMINISTRATION" CREDENTIALS BY TYPE OF SCHOOL

Type of School	Type of Credential		Total
	Provisional	Clear	
Junior High	30	55	85
Senior High	108	261	369
Community College	38	201	239
Skill Center	2	0	2
ROP & ROC	9	25	34
Adult School	3	8	11
Apprenticeship Program	0	0	0
Correctional Facility	1	2	3
Total	191	552	743

Chi Square = 24.47379 Significance = 0.0004

SECTION THREE
CONCLUSIONS AND PROJECTIONS

SUMMARY OF FINDINGS

The findings of this preliminary report pointed to the unique characteristics of vocational educators working in the public schools and correctional facilities in the State of California. It was pointed out, and certainly comes as no surprise, that senior high schools and the community colleges employed fully 81% of all vocational educators. The "average" vocational educator had a bachelor's degree plus additional units of graduate work, had 10.2 years of teaching experience, and 10.5 years of work experience in occupations related to his area of teaching.

Personnel working in Business and Office Education, Trade and Technical Education, and Industrial Arts accounted for 65% of those persons responding to the questionnaire. The average vocational educator was associated with one of these programs on a full-time basis with 1.3 clear credentials to his credit. These credentials were likely to be either the Secondary, Special Secondary, and/or the Standard Designated Subjects credential.

The distribution of personnel by ethnic background indicated low percentages of American Indians, Asian, Black, and Spanish surname individuals in vocational education. The overall population of minorities (8.4%) was far from representative of the total population, and was in direct opposition to the national findings of "Project Baseline." If data from our final report substantiates these preliminary findings, recommendations will be made for the recruitment, and training of additional minority personnel for vocational education.

CONCLUSIONS

As previously mentioned, the 9,724 responses came from 1,137 school districts, 96 community colleges, 8 skill centers, 2 correctional facilities, and 62 ROP/ROC's. This represents an initial effort. We have not at this point contacted all of the school districts or begun any system of follow-up. It is anticipated that all of the school districts will have been contacted initially by the end of the 1973-74 school year. If the rate of response to the questionnaire is maintained, information on more than 65 percent of the vocational educators in the state will be in the data bank by August 1, 1974.

At the beginning of the fall term of 1974, follow-up procedures will be started in an effort to get 100 percent response to the questionnaire. A variety of

methods will be utilized for follow-up including contacting department chairmen at each institution conducting vocational classes. Vocational Education Regional Coordinators will be asked to assist with slow respondents in their regions. In addition, the Commission For Teacher Preparation and Licensing will be asked to supply us with a list of teachers credentialled in the period between September 1973 to the data of inquiry. The same information will be requested of the Credentials Section of the California Community Colleges. Names of persons having received credentials in vocational areas will be compared with our master list with non-respondents being sent questionnaires to complete. If the process is successful, we will have a complete data bank by July 1, 1975.

PROJECTIONS

The computer system now in operation will enable program planners and teacher-trainers to retrieve useful information about personnel. The system also accommodates periodic input of new information in a variety of categories.

The vocational teacher is an important focus of this study. Until more is known about the problems faced by vocational teachers in the various classroom settings and their resultant needs to keep abreast of changes in the occupational area, little relevant planning can be done at the state level.

Upon completion of the state-wide survey to determine total numbers of vocational teachers in the state, a representative sample of each occupational area will be drawn according to their proportional numbers. Additional data regarding needs for inservice training will be obtained from this group through the use of a more comprehensive questionnaire. Comparisons will be made in order to identify essential needs of vocational teachers that are common to all occupational areas, in addition to the specific needs within each occupation. The resulting analysis will yield a priority list of needs for inservice training as perceived by vocational teachers.

Once priority needs for inservice training have

been identified, a cadre of teachers, teacher-trainers and administrators will develop behavioral goals for each priority need. This approach will insure input from those being served and will strengthen the basis for further inservice education activities.